

DOCUMENT RESUME

ED 245 082

CE 039 071

AUTHOR Hinely, Hugh; Bouie, Dorothy
TITLE Implementation of Teleconference as an Inservice Delivery System for Change Agents in Vocational Education. Final Report from October, 1981 to June, 1982.
INSTITUTION Florida State Univ., Tallahassee. Program of Vocational Education.
SPONS AGENCY Florida State Dept. of Education, Tallahassee. Div. of Vocational Education.
PUB DATE Jun 82
NOTE 100p.
PUB TYPE Reports - Research/Technical (143)
EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Change Agents; *Educational Change; *Inservice Teacher Education; Instructional Materials; Media Selection; *Outcomes of Education; Postsecondary Education; Program Effectiveness; Secondary Education; Teacher Education; *Teleconferencing; *Vocational Education Teachers; *Workshops
IDENTIFIERS *Direct Mail

ABSTRACT

This study was designed to examine the impact of three different inservice delivery modes--teleconferencing, workshops, and direct mail--on vocational education teachers' use of new materials. Variables associated with the impact were the extent of the curriculum materials' use, teacher concerns, cost, and satisfaction. Selected personal characteristics as related to use of materials were also studied. Data were gathered through a 35-item questionnaire administered to 98 teachers and by telephone interviews. Results of analysis of the data suggest the following: (1) a great proportion of participants in all groups were using the materials, but the levels of use were higher for the teleconference and workshop participants than for the direct mail group; (2) the cost to conduct the workshop was much greater than the teleconference, but did not improve the level of use of the materials; (3) the direct mail participants were less satisfied with the inservice, while the levels of satisfaction were similar for the workshop and teleconference groups; (4) the concerns of the direct mail group differed from the other two groups; (5) although age and number of years of teaching affected the concerns that teachers had in the three groups, the degree of implementation of materials was not affected by these personal characteristics. As a result of the study, recommendations were made to provide more instruction for direct mail participants and to consider using teleconferencing as a more cost-effective method of inservice education than workshops. (KC)

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FINAL REPORT

PROJECT NO. DVE 2-1B11
FROM OCTOBER, 1981 to JUNE, 1982

**IMPLEMENTATION OF TELECONFERENCE
AS AN INSERVICE DELIVERY SYSTEM FOR
CHANGE AGENTS IN VOCATIONAL EDUCATION**

**Program of Vocational Education
Florida State University
Tallahassee, Florida 32306**

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**Hugh Hinely
Project Director**

**Dorothy Bouie
Research Assistant**

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Abstract of the Final Report

Title of Project: Implementation of Teleconference
as an Inservice Delivery System
for Change Agents in Vocational
Education

Organization: Program of Vocational Education
Florida State University

Project Director: W. H. Hinely

Expenditures: \$2,600.00

Project Number: DVE 21D11

PROBLEM

The Vocational Division is interested in alternative delivery systems that would help to reach targeted audiences and improve the use of instructional materials. There is a need to study the feasibility of implementing teleconferencing. The approach to investigate the new concept was to compare results with current inservice strategies implemented throughout the division.

OBJECTIVES

The study was designed to examine the impact of three different inservice delivery modes. Variables associated with the impact were the extent of the curriculum materials' utilization, teacher concerns, cost, and satisfaction. Selected personal characteristics as they relate to teacher concerns and extent of use were also analyzed. This analysis was made on the following modes: teleconference, face-to-face presentation, and direct mail instruction.

PROCEDURES

Ninety-eight vocational home economics instructors teaching Food Production and Services, and Food Management Production and Services were the target population.

First, ninety-eight teachers were interviewed by telephone by asking carefully designed questions used to determine to what extent they were using the materials. Secondly, personal, task-oriented, and impact concerns were measured by a 35-item questionnaire. The response rate for teleconference, workshop, and direct mail participants were 70%, 60%, and 71% respectively.

RESULTS AND POTENTIAL UTILIZATION

Results of the data analysis suggest that (1) a great proportion of participants in all groups were using the materials, but the levels of use were higher for the teleconference and workshop participants than the direct mail group. (2) The cost to conduct all three activities were considerably different, but the increased cost in the workshop did not improve the level of use over the teleconference group. (3) The direct mail participants were less satisfied with the inservice they received while the teleconference and workshop did not differ significantly in inservice evaluation. (4) The majority of the intense concerns of all three groups were at the awareness, informational and personal stages, but the direct mail group concerns differed significantly from the other groups. (5) Age and number of years teaching did affect the concerns that teachers had in the three groups. However, the degree of implementation was not affected by these variables.

It is hoped that the results of this study will help administrators and change agents make decisions and recommendations about implementing teleconferencing as a delivery system for vocational educators.

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CHAPTER I

INTRODUCTION

Prior to the 1976 Vocational Education Amendments, dissemination of vocational education products was frequently unsystematic. Product developers used various methods as they tried to deliver their products to the target population. In some cases, the opportunity for product dissemination ended at the desk of an initial receiver of the product who failed to see the need for it. In some instances, the product reached the library but then became a dust collector.

The 1976 Vocational Education Amendments included language that was to guide the future of dissemination of curriculum materials designed to support instructional programs. The statement specified that contracts should not be made:

Unless the applicant can demonstrate a reasonable probability that the funded project will result in improved teaching techniques or curriculum materials that will be used in a substantial number of classrooms or other learning situations within five years after

the termination date of such contracts
(Memo, 1980, p. 3).

There is extensive coercion to improve dissemination and diffusion, and this pressure will continue. Groseclose and Bain (1979, p. 101) stated, "Because of the poorly coordinated dissemination system and lack of agreement on how dissemination can be done most effectively, no group has been willing to give it top priority. For example, Patricia Graham, former N.T.E. Director, viewed dissemination as "vitally important but little understood" (p. 101).

The Bureau of Research, Dissemination, and Evaluation, Florida Division of Vocational Education, funds numerous projects each year designed to yield superior educational products for Florida's vocational educators. The results of these projects, which are often referred to as products, must be distributed from the developer to the potential user.

Examples of such products are process models, impact studies, curriculum guides or materials, procedure manuals, non-curriculum research, and exemplary products, and catalogs. After these educational materials are produced, it is the responsibility of the Dissemination and Diffusion Section of the Division of Vocational Education to maintain a statewide system for circumfusing the

materials to the educators and perpetuating the utilization of materials.

A variety of diffusion strategies such as workshops, drive-in conferences, and video programs, has been traditionally used to motivate educators to use educational materials. But, in a rapidly changing society and a knowledge explosion era, vocational educators must strive to improve the delivery systems designed to encourage the installation of educational materials. Because of the increase in travel expenses, emphasis on time management, technological changes, and individual learning styles, there is a need to explore new strategies.

Today's educational systems involve numerous individuals responsible for disseminating, promoting, and facilitating programmatic change. Educators in this role include state, district, and building administrators, consultants, coordinators, and other kinds of linking agents.

Frequently, change agents and practicing teachers both desire inservice training on new concepts, curriculum materials, and other research that will help them perform a cogent job. One strategy that has been employed inordinately is the process of direct-mailing. Seminars

and workshops have also been a popular trend for imparting information. Another alternative, one particularly applicable for sparsely populated districts, is instruction offered via teleconferencing. These are just a few of the ways educators are participating in inservice education.

These delivery systems with many logistical advantages need careful examination to determine if they can be used as viable instructional delivery systems for disseminating vocational products. A comparison of levels of use, stages of concern (Hall, 1979), and cost between these three strategies will enable planners to make conclusions and recommendations on the use of direct

mailing, face-to-face presentations, and teleconferencing as inservice delivery systems.

Purpose of the Study

The purpose of the study was to compare teacher concerns, degree of implementation, and cost factors when selected vocational materials are diffused by three different delivery modes. Personal characteristics and satisfaction with inservice were other variables considered in the analysis. The comparative analysis was made on the following systems: (1) teleconference, (2) workshop, (3) direct mail instruction.

1. What are the differences in the levels of use of users/non-users accruing from three inservice delivery modes. These modes are: face-to-face presentation, teleconference, and direct mail instruction.
2. How does the cost differ in the use of teleconference, face-to-face presentation, and direct mail instruction?
3. To what extent do the delivery systems appear to be acceptable to the various target group members?
4. What are the differences in the stages of concern of users/non-users accruing from three

inservice delivery modes? These modes are: teleconference, face-to-face presentation, and direct mail instruction.

5. How do selected users/non-users personal characteristics (educational level, type of school setting, and numbers of years teaching in school system) relate to stages of concern and levels of use.

Research results and theories examined in connection with this study support the need to investigate the effectiveness of various methods and materials for delivering inservice education to vocational educators. This research study used three methods to analyze some of the procedures for introducing innovations and uncovered some strategies that can be used to improve the system for delivering inservice education.

Limitations

The population and new curriculum materials in this study were used in only one program area in vocational education.

The participants were not randomly selected for the face-to-face presentation.

The findings in this study are limited to home economics instructors teaching Food Production and Services, and Food Management Production and Services.

Definition of Terms

1. Audio Teleconference - the interaction of three or more groups of people using the telephone system.
2. Change Agent - a person who is responsible for training and/or implementing change within a system.

3. **Delivery System** - the methods used to orient and train target group members to use the materials.
4. **Diffusion** - the spreading of new ideas or materials through a planned activity (State of Florida, 1975).
5. **Dissemination** - the process of providing products, procedures, and practices of proven value to targeted groups or educators (State of Florida, 1975).
6. **Products** - the materials developed or acquired from funded research projects from the Division of Vocational Education.
7. **Research and Utilization** - popular term used to denote the development of a product and strategies used to promote use of the product.
8. **Face-to-face Presentations** - workshops or seminars whereby the program participants are required to be at the same physical setting as the presenter. Face-to-face presentations and workshops are used interchangeably in the study.
9. **Level of Use** - focus on the change agents' behavior and performance with the innovation (Hall, et al., 1975).

10. Stage of Concern (SOC) - the concept of concern is a tool developed to describe the perceptions, feelings, and motivations of innovation users and non-users (Hall, et al., 1975).
11. Concerns-Based Adoption Model (CBAM) - this is a diagnostic tool for determining the effectiveness of training and a system for managing the change process.

Summary

The purpose of this study was to measure certain variables after a new curriculum product was diffused by three different methods. In conducting this study, a determination was made on the extent to which the Food Production and Service Competency-Based Curriculum materials are used. Further, the Concerns-Based Adoption Model uncovered some of the users' and non-users' concerns about the implementation of the materials. Cost comparison and the degree of satisfaction with the in-service were analyzed for the three groups.

CHAPTER II

REVIEW OF THE LITERATURE

The primary focus of this study was to examine three inservice deliver systems: (1) teleconference, (2) face-to-face presentation, and (3) direct mail instruction. To conduct an analysis of these strategies, the review of literature was focused on three major areas: diffusion models, types of delivery systems, and factors affecting adoptions of innovations. A synthesis of the review of literature helped to answer the following questions:

1. What valid diffusion model can be used to help compare the delivery systems?
2. What has been written about advantages and disadvantages of various inservice strategies?
3. What is in the literature regarding the history of audio teleconference, workshops and direct mail?
4. What has been written regarding the efficiency of teleconference in terms of attitudes and cost factor?

5. What are some barriers to overcome when implementing an innovation?
6. What are the results of formal studies that compare audio teleconference with face-to-face presentations?

The spreading of new ideas or new materials is called the process of diffusion (State of Florida, 1975). Diffusion theory offers a theoretical framework to explain the implementation of information, ideas, and new products. Combining this framework with existing theory on characteristics of adopters, and understanding people, may advance one's understanding of the best strategy to introduce new products to educators.

Diffusion Models

Many educators feel it is not the quality of an innovation that determines its adoption rate. Rather, it is the lack of attention to the change process, and insufficient knowledge of change models and theories that leads to non-use (Loucks, 1977). Most researchers indicated that some knowledge of theories and models enables the change agents to be more effective.

Over the last 30 years, researchers have studied the adoption of all kinds of new ideas--from hybrid seed corn to birth control pills to driver education courses (Havelock, 1973). Evolving from this work is the

generally accepted notion that individuals must pass through a series of identifiable stages leading to the adoption of a new idea. A review of some of the models will help the reader to understand the strategies used by researchers to assess the adoption of an innovation.

The observation that people differ in their rate of acceptance, adoption of new ideas, and practices has been a major research effort in rural sociology, and related fields during the past two decades. Much of the research has focused on farming practices beginning when the individual became aware of a new technique, and terminates with the decision to either accept or reject the practice. This process has been envisioned as involving five stages: (1) awareness, (2) interest, (3) evaluation, (4) trial, and (5) implementation (Havelock, 1973).

There are a number of theories and models of planned change. Almost all of them are predicated on the assumption that there is an orderly process that extends from research, to development, and to use despite some contradictory evidence. One of the most widely known and cited models of theory into practice is that of Clark and Guba (Knezevich, 1975). They attempted to interrelate (1) research, (2) development--both invention and design, (3) diffusion--dissemination and demonstration, and (4) adoption--which includes trial, installation and institutionalization.

One of the most popular models for change in recent years has been the Concerns-Based Adoption Model (CBAM) (Hall, 1978). The research for this model is based upon years of experience in implementing educational innovations in school and college settings. The Concerns-Based Adoption Model, according to Hall, is based on the assumption that an innovation will be adopted. This Model was formulated from the diffusion theory of research, development and dissemination as other models developed by Havelock (1973), Guba and Clark (1965), Rogers (1971). Hence, the emphasis evolves around trial and use of an innovation and its installation.

Within the Concerns-Based Adoption Model, two variables serve as diagnostic tools for obtaining a more vivid and lucid picture of the use of the innovations. The two levels are Stages of Concern about the Innovation and Levels of Use of the Innovation (Hall, 1978). In combining the results of diagnostic tools used, a change agent can manage the change process and can prescribe relevant interventions (Hall, 1978).

A diagnostic instrument was developed to identify the Stages of Concern that a user or non-user has about an innovation. These Stages of Concern are categorized into seven areas. See Table 1 for complete definition of each term.

Table 1

Stages of Concern about the Innovation

Refocusing:	The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative.
Collaboration:	The focus is on coordination and cooperation with others regarding use of the innovation.
Consequence:	Attention focuses on impact of the innovation on students in their immediate sphere of influence such as competencies and changes needed to increase student outcome.
Management:	Attention is focused on the processes and tasks of using the innovation and the best use of information and resources.

- Personal:** Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment.
- Informational:** A general awareness of the innovation and interest in learning more detail about it is indicated. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.
- Awareness:** Little concern about or involvement with the innovation is indicated.

Adapted from Measuring Stages of Concern about the Innovation: A Manual for Use of the Stages of Concern Questionnaire, George Hall, 1979, p.52.

It is the function of change agents and policy/decision-makers to aid in the resolution of self-concern and facilitate the educators toward more task and impact-related concerns (Hall, 1975).

Program developers and administrators spend a significant amount of time studying educational change; more specifically, the problems, issues, and results of the variety of product innovations that are in use. One problem that persists in most of these studies is how to conceptualize, and measure the differences in the way individuals use a given innovation (Loucks, 1977). Administrators need to know the degree of implementation if they are to make intelligent decisions about resources, support, and training. Evaluators need to know the content and quality of use if they are to validly assess the effect of the innovation (Loucks, 1977). To this end, Level of Use, the second key dimension for assessing educators as they are involved in change was developed.

Level of use of the innovation represents behaviors demonstrated by individuals as they grow in the process of innovation implementation. Levels of use are useful to administrators, evaluators, and researchers responsible for facilitating, monitoring, and/or evaluating educational change (Loucks, 1977). Level of use begins with the individual orienting her/himself to the innovation. The

individual is actively involved in basic orientation techniques such as attending workshops. Six different stages have been identified for the Level of Use Model.

A focused interview format has been developed for interviewers to use as a guide to probe the user and non-users about the use of the innovation. Based on the information gathered in the interview on the operational definitions, and decision points of level of use, the educator is rated on overall level of use, and in six categories that represent a detailed breakdown of each of these levels. The findings from research studies have verified that the six different levels of use can be found in practice (Hall, 1980). The Level of Use chart is illustrated in Table 2.

Table 2

Levels of Use of the Innovation

- | | |
|-------------|---|
| 0. Non-use: | State in which the user has little or no knowledge of the innovation, no involvement with the innovation, |
|-------------|---|

and is doing nothing toward becoming involved.

1. Orientation:

State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.

2. Preparation:

State in which the user is preparing for first use of the innovation.

3. Mechanical Use:

State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet use needs than client needs. The user is primarily engaged in a stepwise attempt to master

the tasks required to use the innovation, often resulting in disjointed and superficial use.

4. Routine:

State in which use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use of its consequences.

5. Refinement:

State in which the user varies the use of the innovation to increase the impact on clients within the immediate sphere of influence.

Adopted from The Effects of Change on Teachers and Professor--Theory, Research, and Implications for Decision-Makers, G. Hall, 1975, p. 55.

The Concerns-Based Adoption Model is based on the premise that change is a highly personal process, and that it effects individuals differently. Because of the extensive research conducted on this model, it was selected to be used to evaluate the implementation of materials in this study.

Types of Diffusion Strategies

A variety of diffusion strategies has been traditionally used to motivate educators to use new products. But, in a rapidly changing society, vocational educators must endeavor to ameliorate the delivery systems designed to effectuate the installation of educational material. Because of the increase in travel expenses, inability to acquire released time for teachers, new technological advancements, and reportedly non-use of materials, there is a need to explore new strategies.

The traditional mode is the formal class or workshop whereby activities for all participants are identical. There is limited use of mediated material to vary delivery. Seldom are there opportunities for participants to chose from an assortment of delivery systems that are most suitable for meeting inservice needs. Merely adding inservice to the already crowded schedule of trainers will not insure acceptance of a product (Cruickshank, 1979).

A number of recent surveys has shown there is a wide-spread dissatisfaction with inservice training programs throughout the country. These surveys show that staff development or inservice that occurs closest to the classroom is seen as most helpful, and is accepted best (Dillon, 1979). The most effective efforts for change, according to the Rand Study (1978) take place close to the action and focus on practical problems (Ryor, 1979). Current practices should be studied carefully and analyzed in a manner that will result in more productive professional development.

Teleconferencing

In a general sense, people have been conducting teleconferences since the discovery of the telephone (O'Donnell, 1982). Teleconferencing means confering or interacting with groups of people at two or more locations. Basic teleconferencing often takes the form of a conference telephone call among many cities. This form of teleconferencing is instantly accessible and low in cost especially to organizations with WATS Service. Speaker phones also make group interaction possible. The type of teleconference of concern in this paper is audio teleconference. Telecommunications is a growing and dynamic industry. More people today are using electronic meetings such as audio teleconference, audiographics,

video conferences and computer conferences (Johansen, 1979).

One of the popular reasons for interest in teleconferencing is its proven effectiveness and this is continuously improving with the discovery of new equipment (Johansen, 1979). There are many advantages to using audio teleconferences. A summary of some of these advantages from the literature will be discussed.

Audio teleconferencing appears to be adequate for many tasks and it seems to be more accessible to a diversity of groups. The general theme from the literature is that audio teleconferencing is effective for information exchange, discussion of ideas, simple problem-solving and similar tasks (Johansen, 1979).

The benefit of audio teleconferencing can range from energy saving techniques, improved organizational response time, more flexible choice of location, organizational structure, to improved productivity (Pye, 1977). During an energy crisis, driving excessive miles to a designated place is sometimes prohibitive. An alternative was for inservice education to be offered via the telephone network system. Teleconferencing can provide access to more people and access to a wide range of information resources (Parker, 1980).

Audio teleconferencing is nearly always cheaper than traveling to face-to-face meetings. The variables affecting the break even point are the distance separating the parties, the length of the meeting, the number of people required to travel, and the amount of time it takes to travel (Hammond, 1979). However, audio teleconferencing is most useful and cost effective if they are separated about one-half hour apart (Williams, 1978).

Teleconferencing encourages more specificity and brevity in meetings (Johansen, 1979). It encourages leaders to stay on task. Cross (1982) found teleconferencing as a way to increase "organizational velocity" or the ability to get decisions passed, products reviewed and evaluated in a more rapid and timely fashion. Not only are the leaders more organized but they also will generally have more control over individuals who will dominate the conversation (Holloway, 1976). Another appealing aspect of the audio teleconference is that it can take place virtually anywhere there is a telephone. Group members can participate in a teleconference at the office, at home, on the road, or in special designed meeting rooms that have conference equipment.

Telecommunications systems such as teleconference can be used successfully in the delivery of inservice training (Blackhurst, 1978). These systems can relay information to large numbers of educators, thus avoiding

prohibitive travel and fuel costs. In summary, teleconferencing works best for (1) giving and receiving information, (2) asking questions, (3) exchanging ideas, (4) problem solving and (5) generating ideas (Monson, 1980).

The use of teleconferencing as an inservice delivery strategy is eminent among many of the educational and business settings (Johansen, 1979). A review of some of the studies will uncover how these institutions are using teleconferencing, and support the need for additional research in this area.

Frye (1973) conducted a study to evaluate the effectiveness of telelecture as an inservice delivery system. Teleconference and standard class instruction were equally effective as educational delivery systems when criteria were measured from the instructor's objectives. Students who profited most from the telelecture system differed in personal predispositions.

In another study, telephone instruction was compared to face-to-face instruction for a university-based group for a one hour graduate credit course. A comparison was made on post-test results from each of the delivery systems with a control group who received no instruction. Cost comparisons were also made. F-ratio revealed a significant difference between means (Hersey, 1977). The telenetwork scores were significantly higher than the face-to-face or control group scores. The premise that

there is merit in the use of telephone instruction as alternative delivery system for university-based teacher inservice was substantiated in the study conducted by Hersey (1977) and Pellet (1970).

In Spring 1980, a project was conducted to determine the feasibility of using the telephone as an instructional delivery system at Central Piedmont Community College in Charlotte, North Carolina. Each student who participated in the project was issued a telephone amplifying system with a small speaker. One hundred thirty-six students were involved in the project. Student reactions to the system were positive. There were no discernible differences in student achievement that could be attributed to the techniques of delivery (Alford, 1981). Teacher Corps Programs and the School of Extended Studies and Community Service at Eastern Montana College were faced with a similar challenge of reaching a scattered population through preservice and inservice education (Davison, 1981). This teacher corps project has investigated alternative approaches to delivering courses to off-campus locations. Students surveyed indicated that they were satisfied with instruction offered and were looking forward to more of their courses being available via this medium.

Seven institutions and 75 campuses in Indiana are joined together by a telecommunications system which

permits them to hold long distance conferences. In a 12-month period, one institution saved more than 66,000 travel miles and 1,400 man hours (Gruebel, 1982, p. 59).

Perhaps the most useful resource on the use of the telephone in education is the University of Wisconsin Extension Instructional Communication System. The educational telephone network is a four-wire dedicated telephone network which simulates a large party line that enables instructors to reach 120 Wisconsin communities simultaneously (Parker, 1977).

Parker reported that virtually all studies have found that telephone classes were as successful as face-to-face classes, and the telephone was capable of being used for effective education.

An example of a telecommunications program that has emerged in recent years is Networkshop. Networkshop provides a unique blend of small group learning with telecommunications. An average of 450 participants are gathered in 18 groups of 25 across the country. Participating sites are interconnected by portable, acoustical teleconferencing equipment. According to Melchiorri (1981, p. 2), the commonly cited reason for positive response include the following: "Instructional objectives are kept in mind, actual case histories are discussed in relevant terms, and the mode of communication provided a

stimulating educational atmosphere as well as an arena for debate."

Teleconferencing can be used in education to bring community leaders such as writers, business people, and political leaders into the schools without high cost. Students in K-12 in Stillwater, Minnesota, were able to listen to several speakers for as little as 10% of their total budget allocated for field-trips (L'Allier, 1979). This was done by using portable conference telephone which includes loudspeakers and telephone handset. The students, teachers, and speakers have reacted very favorably to this technology in Stillwater, Minnesota (L'Allier, 1979). The concept of teleconferencing in the Air Force is gaining acceptance. Teleconferencing has been used to improve the management skills for Air Force personnel. On the basis of their experiences, there is strong support that the nature of the course content, age, experience, and environmental conditions at remote areas play a vital role in student achievement and the acceptability of the system (Christopher, 1980).

While this research is primarily concerned with teleconferencing in an educational setting, one business reference is included to emphasize the impact of teleconferences and its apparent potential. NASA (the U.S. National Aeronautics and Space Administration) has been operating a teleconferencing system for almost ten years.

It consists of 30 studios at NASA sites and conducts about 30,000 personnel meetings per year. The system is audio supplemented by rapid facsimile and cost saving is estimated about a half a million dollars each year (Pye, 1977, p. 235).

Frye's (1973) review of studies showed that there were weaknesses in the literature. Samples were small and sometimes there were no pre-test. Success was not measured from the participants standpoint. Also, no studies focused on the differences between participants who clearly profited from a given method and those who failed to profit.

There is a need for additional study to show the effectiveness of teleconferencing in an inservice setting.

Face-to-Face Presentation

One of the more common means of diffusion and dissemination of educational products is through workshops. Workshops are expensive because of the expenditure of time, money, and human resource necessary to conduct them (State of Florida, 1975).

"The communication richness of face-to-face is unequalled by teleconferencing media" (Johansen, 1979, p. 114). The concern in planning face-to-face conference is when are the conferences absolutely necessary? While

face-to-face will remain the most natural medium to most people for some time to come, it is not necessarily the most efficient for all situations (Johansen, 1979). The fundamental characteristic of face-to-face communication is that all participants are at the same location simultaneously. This provides an opportunity for both planned and unplanned communications. Also, experiences to date suggest that face-to-face communication is perceived as more friendly than any other telecommunication techniques. Most people respond more positively to face-to-face meetings and are more confident in communicating when they meet in person (Johansen, 1979).

The ability to see a person affects some more than others. According to O'Donnell (1982), 80% of human communication in a face-to-face conversation is made up of facial expressions, gestures, twitching and wordless signals. You miss the non-verbal cue and body language signals when interacting through other means.

Preparation is required for conducting workshops, but the time spent for maintaining group organization is less for face-to-face than for audio teleconferencing (Johansen, 1979). The time spent preparing for workshops is not as personally demanding (Weston, 1979). Workshops should be primarily considered when there is a need for face-to-face meetings between a qualified expert and target group members (State of Florida, 1975).

The face-to-face presentations can be conducted at statewide workshops, or regional meetings. It enables the experts to distribute the product, explain its purpose, demonstrate its use, answer questions, obtain immediate feedback regarding apparent inadequacies and suggestions for improvement. This technique requires some to travel long distances, and some trips require staying overnight.

Regional face-to-face sections can be conducted to diffuse and disseminate educational products to teachers and other target group members. This method can be used if the target group is too large and too geographically separated to be handled in a large, statewide meeting. Materials can be disseminated in a very short time to target group members. Another popular trend, is to train facilitators, or early adopters, who will assume the responsibility for imparting information in small group sessions at the local level (Lawrence, 1974). These are only a few of the ways face-to-face presentations are conducted.

Direct Mail

Direct mailing of an educational product to target group members can be used as the diffusion and dissemination strategy under certain limited conditions. In using this technique, the product, along with any supplementary explanatory or instructional materials would be mailed

directly to the individual member. It could be used if either the product and its application were sufficiently simple or self-explanatory as to make a more complex and comprehensive procedure unnecessary, or if the target group members were already so familiar with the content and purpose that they required no additional orientation.

The advantages of direct mail instruction method are that it is the most economical strategy to pursue. It is rapid and uniform in its coverage of the target population, it requires no special equipment or scheduling, and new members of the target population can be covered as they join the group (State of Florida, 1975).

There are disadvantages to using the direct mail instruction. First, there is no opportunity for clarifying discussions between the developer/producer and the target group members. Secondly, there is a loss of motivating factors to use the product that a more stimulating technique might have. Third, cost involved in direct mailing procedures are limited to the preparation and reproduction of any supplementary explanatory material, and mailing of the products and the supplementary materials.

Hull (1980) conducted a recent study in Florida to determine the types of products developed in Vocational Education and the methods of dissemination. Direct mail was the most frequent means of distributing products to

potential users. Most of the products (72%) in the distribution survey were sent to recipients by direct mail. Over 40% of the products came to users through the mail. However, in the "use survey," many of the products (32%) were distributed at conferences or meetings. This was particularly true for products given to teachers. 66% of the teachers received products at meetings and 66% of them received products from their supervisors (Hull, 1980).

Many of the products (70 to 80%) not directly related to classroom use, such as research reports, knowledge analysis papers, and administrative guides were distributed free through the mail. However, learner materials were most often available by mail (90% of the time) as cost-recovery items. Instructional guides tended to be handed out (80% of the time) at inservice workshops (Hull, 1980).

One-way communication such as memos or lectures has its place in the process of implementing innovations, but opportunities for two-way interaction should be emphasized in an innovation installation plan (Hull, 1975). Only when potential users of the innovation are highly motivated, or the installation of the innovation is in early stages should one-way communication techniques be used.

Summary

The review of the literature on educational change and adoption of innovations illustrates the intricate variables that affect implementing change. Information in and of itself does not bring about long-term change. Technical assistance through an appropriate delivery system may be the critical ingredient in implementing innovations. Knowledge about new material is useless unless those who receive it are motivated to find new

solutions and have acquired the skills to accomplish the change.

It is clear from the literature that the concern with using instructional materials is a frequent theme. It is also evident that motivating people to use these ideas are integrally related to the adoption of innovations and the dynamics of planned change. It is the premise of this research that people can be motivated to use products and materials without using the traditional face-to-face presentations. All too often change agents tend to forget the experience and intelligence of the teachers.

While it is recognized that, especially in recent decades, change in education occurs slowly, educators must not be so accepting of this situation that it impedes efforts to reassess and improve dissemination and diffusion strategies. It appears that the resistance to change can be countered by well-planned strategies and techniques. The path across the bridge from theory or development to practice is a tedious one requiring adoptions and special consideration of different product, target groups, and individual local districts.

The concern becomes what delivery system(s) will help to bring about the use of the materials or products.

CHAPTER III

DATA ANALYSIS

This Chapter presents and analyzes the data collected by personal interviews and a written questionnaire. Included are data related to the return rate of the instrument, participants in the interview, age, sex of subjects, number of years teaching and place of employment. This study was designed to assess the extent to which participants were using the curriculum materials, and the personal management and impact concerns that the constituents would have in relation to implementing the new materials. Additionally, cost of conducting the inservice, and the degree of satisfaction of the inservice activity were analyzed. The above factors were analyzed and compared for three groups. These groups include teleconference, workshop, and direct mail participants.

In the statistical analysis, .05 was used for statistical significance.

Assessment of Levels of Use

The Level of Use Model describes the various stages that a user will progress through before implementation of the innovation. The six categories used to assess the Levels of Use are (1) knowledge, (2) acquiring information, (3) sharing, (4) assessing, (5) planning and (6) performing. Each category has a specific scale point definition to help determine the Level of Use. The Levels are defined as: Level 0 - non use, Level I - orientation, Level II - preparation, Level III - mechanical level, Level IV - routine, and Level V - refinement. Integration and renewal levels in the Hall's Model were not included in the study because the focus interviews were conducted in the early stages of implementation. Therefore, participants would not be performing at the later stages.

In this study, a participant was given an overall non-use rating if they were not using the innovation, including past users who were no longer active with the innovation. To be at Level of Use (LoU) I the participant had at least LoU I rating in knowledge, assessing, and acquiring information. LoU II participants had established a date to begin the use of the innovation. In order for the participants to be given a LoU III, the individuals were actively using the innovation - this ranged from a person who was overwhelmed with the

implementation of this materials to a user who was more efficient and had incorporated the materials into a daily routine. LoU IV users have stabilized the innovation, with virtually no changes in use. LoU V user was assessing the use and evaluating to make changes.

The responses of each participant were evaluated by two raters who have received professional training in the Level of Use Model by Hall. Two percent of the participants were evaluated differently by two raters. In this case, a third rater was asked to rate the respondents. Collaboration was achieved with the third rater.

Demography for Level of Use

All teachers who received competency-based Food Production and Services materials were sent a letter explaining the nature of the study and designated a specific time for a telephone interview. Of the target group, 60% of the participants returned the form with designated time for interviews. The other 40% were contacted by telephone to schedule an interview. Of the non-respondents, two teleconference participants, one person in the workshop group and five members of the direct mail group had left the institutions for various reasons. The total number participating in the study is shown in Table 3.

Table 3
Respondents for Level of Use Analysis

NUMBER OF RESPONDENTS	Tele- conference A	Workshop B	Direct Mail C	Total
	23	47	28	98

The focused interviews were conducted five months after teachers had received the products through the three inservice modes. Calls were made at a designated time. A set of questions designed to probe each category as shown in Appendix C was used to determine a level of use for each person. Comments were recorded for each individual. The average interview ranged from five to seven minutes.

Question Related to Levels of Use

The first research question addressed in this study was, "What are differences in the levels of use of users/non-users accruing from three inservice delivery modes?" These modes are: face-to-face presentations, teleconference, and direct mail instruction.

Table 4 shows that no members of the teleconference group received an overall non-use rating. The study also reveals that 9% were placed in orientation - LOU I. They

were A-2, and A-9. Level II participants totaled 30% of the group. They were A-4, A-6, A-7, A-11, A-16, A-20, and A-23. Level III participants tallied 52% of the group. This group consisted of A-1, A-3, A-8, A-12, A-13, A-14, A-15, A-17, A-18, A-19, A-21, and A-22. Nine percent of the participants were rated Level IV. They were A-5 and A-10.

Table 4 further illustrates that 8% of the workshop participants received an overall non-use rating. They were B-9, B-26, B-27, and B-33. Level I rating was assigned to 2% of the group. The participant was B-46.

Level II ratings were given to 8% of the participants, and they were B-2, B-28, B-35, and B-40. Seventy-eight percent of the group received an overall Level III rating. Among these are 37 participants as indicated on Table 5. The Level IV rating was assigned to B-11.

Further analysis revealed that 29% of the direct mail participants had an overall non-use rating. They were C-7, C-12, C-13, C-15, C-17, C-20, C-22, and C-24. Seven percent of this group received a Level I rating. They were C-19 and C-23. Level II ratings were assigned to 14% of the group. This group consisted of C-5, C-15, C-18, and C-26. Level III ratings were assigned to 50% of the group. These participants were C-1, C-2, C-3, C-4, C-6, C-8, C-9, C-10, C-11, C-16, C-21, C-25, C-27, and C-28. (Table 6)

Analysis of variance showed a significant difference between groups at .0044 as shown on Table 9. The multiple range test indicated group C differs from A and B. Therefore, the direct mail participants mean Level of Use was lower.

Table 4
Level of Use Rating for
Teleconference Participants

Subject	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Performing	Overall Level of Use
A-1	III	II	0	II	II	III	III = 3
A-2	I	I	0	I	I	I	I = 1
A-3	II	II	II	II	II	III	III = 3
A-4	II	0	0	I	III	III	II = 2
A-5	IV	IV	IV	III	III	V	IV = 4
A-6	II	II	II	II	II	II	II = 2
A-7	II	II	0	II	II	II	II = 2
A-8	III	II	0	II	III	III	III = 3
A-9	I	I	0	I	I	I	I = 1
A-10	IV	IV	IV	III	III	IV	IV = 4
A-11	II	II	II	II	I	II	II = 2
A-12	III	II	0	II	II	III	III = 3
A-13	III	III	III	III	III	III	III = 3
A-14	III	II	III	II	III	III	III = 3
A-15	III	III	I	II	III	III	III = 3
A-16	II	III	I	II	III	II	II = 2
A-17	III	II	II	III	III	III	III = 3
A-18	II	II	0	II	III	II	III = 3
A-19	III	III	0	III	III	III	III = 3
A-20	II	III	III	II	III	II	II = 2
A-21	III	III	III	I	II	II	III = 3
A-22	III	II	III	III	II	III	III = 3
A-23	II	II	0	I	II	II	II = 2
						TOTAL:	60
						MEAN:	2.60

Table 5
Level of Use - Rating for
Workshop Participants

Subject	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Performing	Overall Level of Use
B-1	III	II	0	III	III	III	III - 3
B-2	III	III	III	II	II	III	III - 3
B-3	III	II	0	III	III	III	III - 3
B-4	III	III	III	III	III	III	III - 3
B-5	II	I	0	III	III	III	III - 3
B-6	II	II	0	III	III	III	III - 3
B-7	III	II	0	III	III	III	III - 3
B-8	II	III	0	III	III	III	III - 3
B-9	I	I	0	0	0	0	- 0
B-10	II	II	0	III	III	III	III - 3
B-11	IV	IV	IV	III	III	IV	IV - 4
B-12	III	III	III	III	III	III	III - 3
B-13	III	II	I	III	III	III	III - 3
B-14	III	II	II	II	III	III	III - 3
B-15	II	III	III	III	III	III	III - 3
B-16	III	III	0	III	III	III	III - 3
B-17	III	II	0	III	III	III	III - 3
B-18	III	III	III	II	III	III	III - 3
B-19	II	II	III	III	III	III	III - 3
B-20	II	II	0	III	II	II	II - 2
B-21	III	III	0	III	III	III	III - 3
B-22	II	II	III	III	III	III	III - 3
B-23	III	II	0	II	III	III	III - 3
B-24	II	II	0	III	III	III	III - 3
B-25	III	III	III	III	III	III	III - 3
B-26	I	0	0	0	0	I	- 0
B-27	I	0	0	0	I	0	- 0
B-28	II	II	0	II	III	II	II - 2
B-29	III	III	0	III	III	III	III - 3
B-30	III	III	I	I	III	III	III - 3
B-31	II	II	0	III	III	III	III - 3
B-32	III	III	0	III	III	III	III - 3
B-33	III	II	II	0	0	0	- 0
B-34	III	III	0	III	III	III	III - 3
B-35	II	II	0	I	III	III	II - 2
B-36	III	III	II	III	III	III	III - 3
B-37	III	III	II	III	II	III	III - 3
B-38	III	III	III	II	II	II	III - 3
B-39	II	II	III	III	III	III	III - 3
B-40	II	III	II	II	II	II	II - 2
B-41	III	III	II	III	III	II	III - 3
B-42	III	I	0	II	II	II	III - 3
B-43	III	III	III	III	III	III	III - 3
B-44	III	II	0	II	II	II	III - 3
B-45	III	II	III	III	III	III	III - 3
B-46	II	0	I	I	I	I	I - 1
B-47	III	II	III	III	III	III	III - 3
TOTAL:							124
MEAN:							2.63

Table 6
Level of Use - Rating for
Direct Mail Participants

Subject	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Performing	Overall Level of Use
C-1	III	II	III	II	III	III	III - 3
C-2	III	II	II	III	III	III	III - 3
C-3	II	0	0	I	II	II	III - 3
C-4	III	III	III	II	III	III	III - 3
C-5	III	II	I	II	II	II	II - 2
C-6	III	II	III	III	III	III	III - 3
C-7	I	0	0	0	0	0	0 - 0
C-8	IV	III	II	III	III	III	III - 3
C-9	I	I	0	II	III	II	III - 3
C-10	II	II	II	III	III	III	III - 3
C-11	II	II	II	II	III	III	III - 3
C-12	I	0	0	0	I	0	0 - 0
C-13	I	0	0	0	0	0	0 - 0
C-14	II	II	II	I	III	I	II - 2
C-15	II	0	0	0	I	0	0 - 0
C-16	III	II	II	III	III	III	III - 3
C-17	I	0	0	0	I	0	0 - 0
C-18	I	0	II	III	III	I	II - 2
C-19	I	I	0	I	II	I	I - 1
C-20	I	0	0	0	I	0	0 - 0
C-21	IV	III	IV	III	III	IV	IV - 4
C-22	I	0	0	0	I	0	0 - 0
C-23	I	0	I	I	I	I	I - 1
C-24	I	0	0	0	I	0	0 - 0
C-25	III	0	0	III	III	III	III - 3
C-26	II	III	0	II	II	II	II - 2
C-27	II	I	I	III	II	II	III - 3
C-28	III	II	II	II	III	III	III - 3
TOTAL:							32
MEAN:							1.85

Table 7
Composite
Mean Level of Use

Groups	Overall Level Of Use	Mean Score	Standard Deviation	df	F Ratio	F Prob.
Tele- conference N = 23	60	2.60	.7895			
Workshop N = 47	12.4	2.63	.9190			
Direct Mail N = 28	52	1.85	1.32			
Between Groups				2	5.739	.0044*

Assessment of Cost Factors

Question Related to Cost of the Three Inservice Strategies

The second research question was, "What is the difference in cost of the three inservice strategies?" The participants received awareness training either by

teleconference, workshop or direct mail. The cost to conduct the inservice by these strategies were tabulated by using a cost information sheet. The cost information sheet consisted of vertical headings which represented information about cost items necessary for conducting the inservice. The teleconference cost factors included postage, telephone charges, commercial bridging cost for connecting multiple locations, and material cost. The direct cost was the only cost factor considered in this study.

The workshop items incorporated in the cost are mileage, per diem, postage, and material cost. The mileage and per diem for workshop participants were based on Florida's approved allocations of \$50.00 per day and \$.20 per mile. Finally, the direct mail cost considerations were postage and the cost of the curriculum materials.

Figure 10 illustrates the total cost for each teleconference participant and an aggregate cost of \$2,976.28. The average cost of the ^{teleconference} workshop per participant was \$129.40. Figure 11 shows the total cost of the workshop participants as \$8,258.21, and the average cost per person for the workshop was \$175.70. Figure 12 shows the direct mail recipients' cost at \$2,199.48, and an average cost of \$78.55 per person.

Table 8
Cost for
Teleconferencing Participants

Group A

SUBJECT	COST PER PARTICIPANT
A-1	112.41
A-2	139.60
A-3	137.50
A-4	139.39
A-5	101.79
A-6	132.99
A-7	139.77
A-8	138.93
A-9	101.78
A-10	101.78
A-11	138.05
A-12	132.28
A-13	137.83
A-14	125.53
A-15	138.00
A-16	138.17
A-17	137.18
A-18	137.18
A-19	138.18
A-20	138.27
A-21	137.48
A-22	98.08
A-23	134.11

TOTAL COST:

\$2,976.28

Average cost per person - \$129.40

Table 10
Cost for
Group C Direct Mail Participants

SUBJECT	COST PER PARTICIPANT
C-1	78.23
C-2	78.23
C-3	78.23
C-4	78.23
C-5	79.32
C-6	78.66
C-7	79.32
C-8	77.83
C-9	77.83
C-10	78.66
C-11	77.83
C-12	79.32
C-13	79.32
C-14	78.23
C-15	78.66
C-16	78.66
C-17	79.32
C-18	77.83
C-19	78.23
C-20	78.23
C-21	78.23
C-22	79.32
C-23	78.23
C-24	78.23
C-25	78.66
C-26	78.66
C-27	79.32
C-28	78.66

TOTAL COST:

\$2,199.48

Average cost per person - \$78.55

To compare the cost of the three inservice delivery systems, mean scores were obtained, and analysis of variance was conducted on the mean scores. A significant difference was achieved at .0000. (Table 11) Multiple range test indicates that all the groups were different.

Table 11
Variable Cost by Groups

Group	Count	Mean	Standard Deviation	df	F Ratio	F Prob.
A	23	¹ 149.40	14.66			
B	47	175.70	66.99			
C	28	78.55	.5211			
Between Groups				2	37.641	.0000*
Within Groups				95		

Another concern addressed in this study was the relationship between cost of the inservice training and the level of use of the participants in the three groups. Mean scores of the cost and levels of use were compared.

Figure 2
Comparison of Cost and Mean
Level of Use

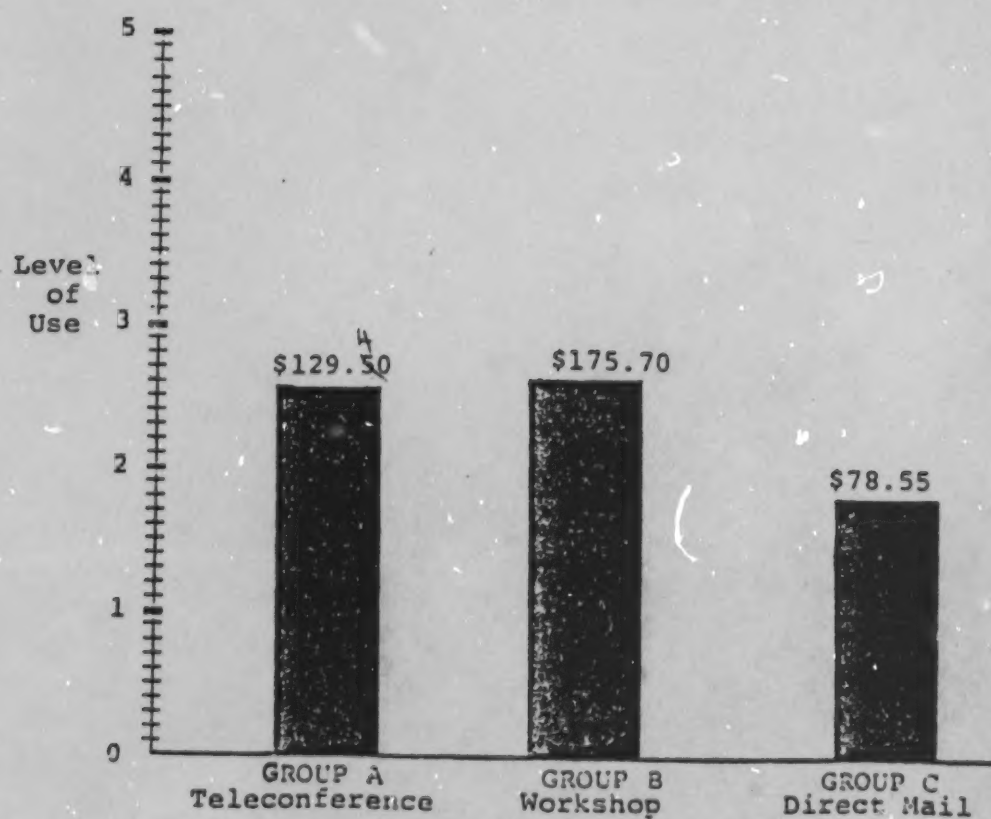


Figure 2 indicates that the direct mail instruction costs the least, but the levels of use of the materials were lower. The cost of conducting the teleconference inservice and workshop program are substantially different. However, the level of use is not affected. The average difference between groups B and C is \$46.20.

Assessment of Inservice Evaluation

Question Related to Evaluation of the Inservice Strategies

The third research question was, "To what extent do the inservice delivery systems appear to be acceptable to the various target group members?"

The question was assessed during the focused interviews. The 98 participants were asked to rate their degree of satisfaction with the inservice training that they received. The rating scale was 1 - poor, 2 - fair, 3 - good, 4 - very good, and 5 - excellent.

In the teleconference group, 78% rated the program very good to excellent. Ninety-two percent of the workshop participants rated the program very good to excellent, and 64% of the direct mail participants rated the inservice program very good to excellent. (Table 12) A Chi-square analysis yielded no significant difference at .05.

Table 12

Cross Tabulation by Inservice Evaluation

COUNT ROW PCT COL PCT TOT PCT	POOR-1	FAIR-2	GOOD-3	VERY GOOD-4	EXCELLENT 5	ROW TOTAL
GROUP A	0 0 0 0	0 0 0 0	5 21.7 33.3 5.1	9 39.1 28.1 9.2	9 39.1 19.1 9.2	23 23.5
GROUP B	1 2.1 33.3 1.0	0 0 0 0	3 6.4 20.0 3.1	15 31.9 46.9 15.3	28 59.6 59.6 28.6	47 48.0
GROUP C	2 7.1 66.7 2.0	1 3.6 100.0 1.0	7 25.0 46.7 7.1	8 28.6 25.0 8.2	10 35.7 21.3 10.2	29 29.6
COLUMN TOTAL	3 3.1	1 1.0	15 15.3	32 32.7	47 48.0	98 100.0

RAW CHI SQUARE = 12.66514 WITH 8 DEGREES OF FREEDOM.
 SIGNIFICANCE = .1239

Analysis of variance yielded significance between groups as indicated on Table 13. Multiple range analysis indicated that group (Table 13) is significantly different from B.

Age factors and years of teaching experience were collected on 65 of the 98 participants. Further analysis was conducted with this group to determine if there was a relationship between certain personal characteristics and inservice rating. Analysis of variance yielded no significant difference on variable inservice by teaching experience at .4174 and no significant difference at

.8135 for variable inservice by age. Therefore, neither of the variables affected the inservice rating.

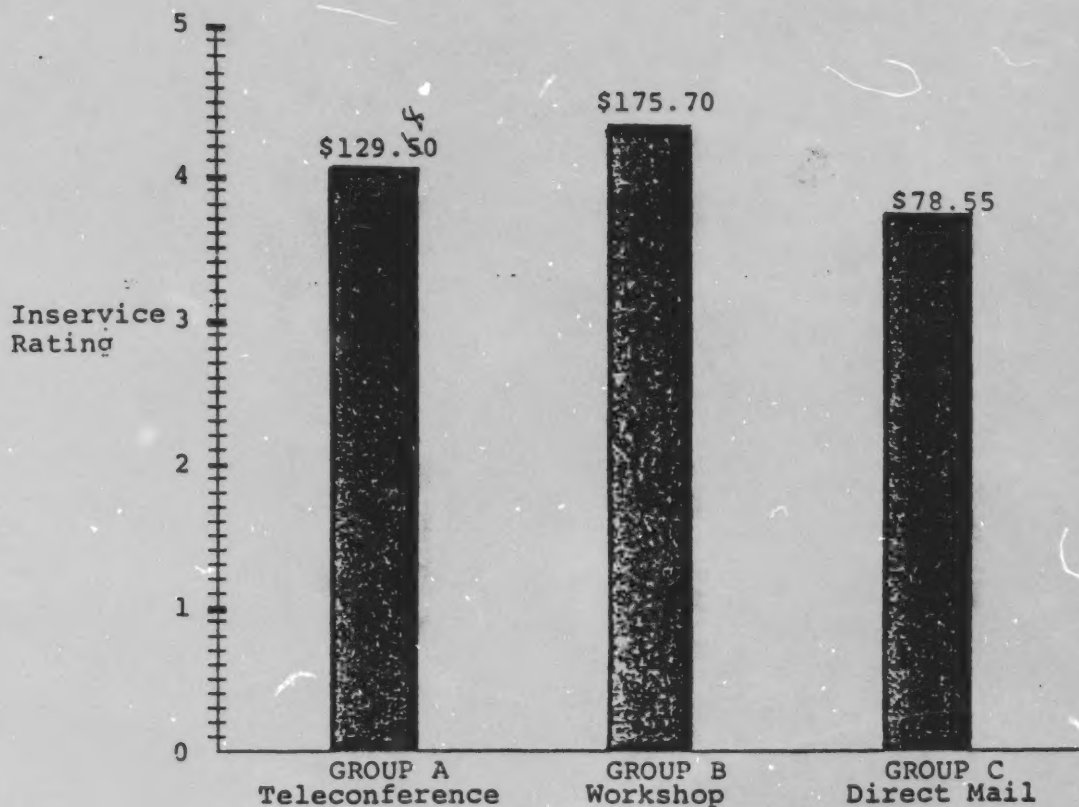
Table 13
Variable Inservice by Group

Group	Count	Mean	Standard Deviation	df	F Ratio	F Prob
A	23	4.17	.7777			
B	47	4.46	.9035			
C	28	3.92	1.1830			
Total	98	4.2143				
Between Groups				2	4.325	.0159*

Further analysis showed a relationship between the inservice evaluation and the cost of conducting the inservice programs.

Analysis of variance yielded a test of significance between mean groups by inservice rating. The bar graph (Figure 3) further seems to indicate that as the cost was lower for the inservice, the participants seemed to be less satisfied with the inservice activity.

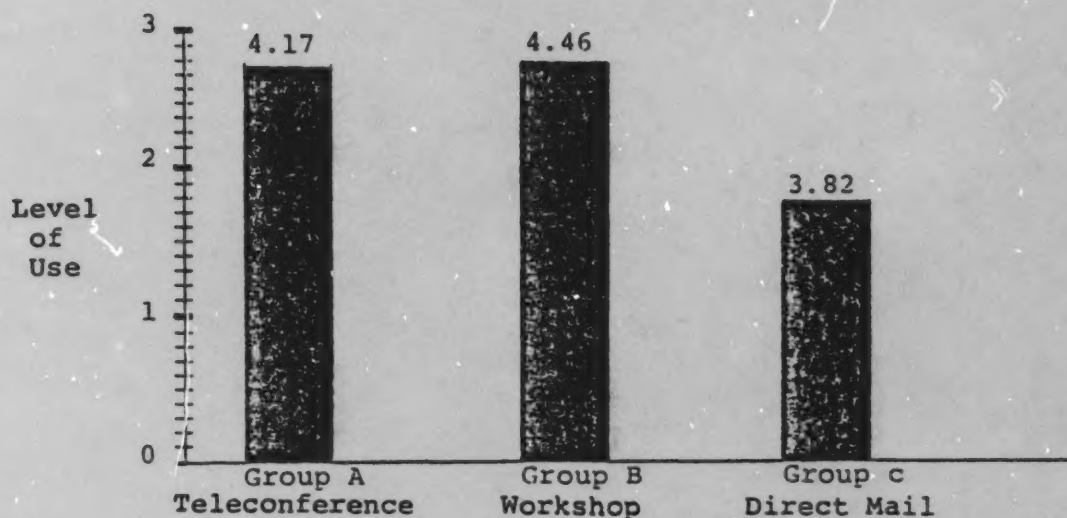
Figure 3
Inservice Evaluation and Cost Comparison



A comparison was made between mean level of use and mean inservice evaluation.

The levels of use tended to lower with the degree of satisfaction of the inservice activity. The level of use and degree of satisfaction seemed to remain the same between group A and group B.

Figure 4
Mean Level of Use and
Mean Inservice Evaluation



Assessment of the Stages of Concern

The Stages of Concern questionnaire was designed to diagnose the concerns that teachers might have about a particular innovative. At the initial implementation of this innovation, high scores progress from the first stages of concern, awareness, informational and personal stages, then to management consequence, collaboration, and refocusing. As a result, non-users generally have high scores on the first stages with scores getting progressively smaller at the other end of the spectrum. It is expected that many teachers in the study would have high scores on the first stages of concern. In this

analysis, the focus was on comparing the concerns of users and non-users after receiving inservice through three different delivery systems.

Demography for Stages of Concern Analysis

The Stages of Concern questionnaire was mailed to all teachers who received the new Food Production and Service Curriculum materials. The total mailed by groups was 23 for the teleconference group with a 70% return rate; 28 for direct mail with a 71% return rate; and 47 for workshop participants with a return rate of 60%. Two returned questionnaires could not be used because of insufficient data. The rate of return was quite rapid and relatively high for mail questionnaires, perhaps because of the personal interaction in the telephone interview.

Table 14
Distribution by Sex for
Stages of Concern Respondents

SEX	Group A	Group B	Group C	TOTAL
MALE	1	2	2	5
FEMALE	15	27	18	60
	16	29	20	65

An analysis of respondents by sex revealed that 92% of the participants were female and 8% were male. (Table 14) Further analysis by sex were not conducted because of the ratio of males to females in the various groups.

Seventy-seven percent of the participants returning the Stages of Concern questionnaire were high school teachers. Twenty percent of the respondents were teachers at the area vocational-technical centers in Florida, and 3% of the respondents teach at a community college. (Table 15) Because of the distribution by educational institution, no further analyses were conducted by this category. The frequency distributions for age and teaching experiences are shown in Figure 21 and Figure 24 respectively.

Table 15
Distribution by Institution for Stages of Concern
Respondents

Educational Institution	Group A	Group B	Group C	Total
High School	14	20	16	50
Area Center	2	8	3	13
Community College	0	1	1	2
	16	29	20	65

Although Group A participants were not randomly selected, every effort was made to give each teacher an equal opportunity to attend the workshop. The teleconference and direct mail participants were randomly placed into their respective groups.

Question Related to Stages of Concern

The fourth question was designed to measure the differences in the stages of concern of users/non-users accruing from the three inservice modes. This part of the research had to be measured by a different technique from the level of use measure. The profiles used for analysis have been developed based on the CBAM theory (Hall, et al., 1979).

Table 16 illustrates the number of respondents and the number of high scores for each stage. Further analysis showed that 75% of the teleconference participants had the greatest concerns at the first three stages. Fifty-nine percent of the respondents from the workshop high scores fell in the first three stages of concern category, and 80% of the respondents in the direct mail group scored their highest point on the first three Stages of Concern.

Table 16
Stages of Concern
High Score Analysis

STAGES OF CONCERN	TELECONFERENCE GROUP A		WORKSHOP GROUP B		DIRECT MAIL GROUP C	
Awareness	5	31	2	7	5	25
Informational	3	19	6	21	7	35
Personal	4	25	9	31	4	20
Management	2	12.5	5	17	1	5
Consequence	0	0	2	7	0	0
Collaboration	2	12.5	3	10	1	5
Refocusing	0	0	2	7	2	10
TOTAL:	16	100%	29	100%	20	100%

Summary

This chapter was designed to analyze the data collected on the proposed questions in the study. More specifically, information was collected to determine whether and to what extent the Food Production and Services Curriculum materials were actually being used. The concerns that the teachers have in implementing the need materials were measured. Cost of conducting the inservice and the teachers' degree of satisfaction with the inservice were other factors investigated. The mean analysis was conducted on the factors above within three inservice groups. They are teleconference, workshop and direct mail. As a result of this data analysis, the following were determined:

1. The majority of the participants in all groups were performing at a Level III (Mechanical Use) for the curriculum materials. The direct mail group had a larger number of non-use ratings, and analysis of variance indicated that the difference in the direct mail group and the other two groups is significant.
2. Mean analysis of the cost of each inservice strategy yielded a significant difference among all groups. The workshop cost averaged more per person than the teleconference and direct

mail participants. However, it was found that when you compared the means levels of use with the cost of each group, there was no significant difference between the workshop and teleconference participants' levels of use, but the cost was significantly higher for workshop participants. The cost for the direct mail group was much lower than the other two groups, and the levels of use were also significantly lower.

3. Analysis of variance results indicated there was no significant difference in the degree of satisfaction of the inservice strategy between workshop and teleconference participants. Mean comparisons, however, revealed that the direct mail participants were considerably less satisfied with the inservice they received. There is an established parallel for the direct mail

group between lower cost inservice strategy, a lesser degree of satisfaction with the inservice, and a decreased mean level of use of the curriculum materials.

4. Composite profiles were illustrated to compare high percentile scores for each of the inservice strategies. The awareness, informational, and personal concerns were the most intense concerns for all group participants at the early implementation phase of this project. In group comparison, the teleconference group displayed greater awareness and personal concerns. The direct mail participants had greater informational concerns. The workshop participants had the highest intense concern for the management stage. This analysis suggested that the workshop participants progressed to more of the task-oriented stages earlier than the other groups. Collaboration and refocusing concerns seemed to be at a minimum for all groups. However, the direct mail group displayed a higher refocusing concern.

Mean comparisons for each group showed that the overall teacher concerns for the direct mail

group showed a significant difference from the teleconference and workshop groups.

5. The analysis of the data presented in this study suggests that there was an association between certain personal characteristics among groups on teacher concerns. The levels of use comparison by age and teaching experience showed no difference.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Restatement of the Problem

There is evidence from research that there is a need to explore a variety of inservice techniques designed to perpetuate the adoption of curriculum materials. Certain conditions in education such as reduction of monetary resources, new techniques and technology, accountability, and accessibility of clientele are causing change agents and administrators to examine viable alternatives. For these reasons this research was conducted to determine how certain variables would be affected using three inservice delivery systems. Specific questions that were addressed in this study included:

1. What are the differences in the levels of use of users/non-users accruing from three inservice delivery modes. These modes are: teleconference, workshop, and direct mail instruction?

2. How does the cost differ in the use of teleconference, workshop, and direct mail instruction?
3. To what extent do the inservice delivery systems appear to be acceptable to the various target group members?
4. What are the differences in the stages of concern of user/non-users accruing from three inservice delivery modes? The modes are teleconference, workshop, and direct mail instructions.
5. How do selected users/non-users' personal characteristics (age and number of years teaching in the school system) relate to stages of concern and levels of use?

Procedures Used

This study stemmed from a concern in using a variety of inservice techniques to reach teachers with new curriculum materials and practices. A review of the available literature showed evidence of a need to explore alternatives. Of paramount importance were: degree of implementation of the curriculum materials, cost, evaluation of inservice, and certain concerns teachers would have

about implementing the innovation. The above considerations lead to further review of the literature to identify models that would be instrumental in assessing the selected variables. The Concerns-Based Adoption Model was used to assess the teacher concerns and the extent of use of the materials.

As stated previously, in Chapter 3, Stages of Concern questionnaire and the Levels of Use interview technique have been tested for reliability and validity. On the Level of Use interview, questions were used to assess the overall use by using the decision points from the Level of Use chart. Although the instrument has been tested for validity and reliability, the procedure was tested to refine the flow of questions during the interview. Three teachers and two supervisors participated in a preliminary interview. Two suggestions were recommended to improve the flow of communication.

An announcement of the impact assessment on the use of curriculum material was sent to all teachers who received the curriculum materials. They were asked to schedule a time that would be suitable for them to participate in a telephone interview. Appointments were scheduled and the interviews were conducted with 47 workshop participants in January, 1983. In February, 1983, the interviews were conducted with 23 teleconference participants and 28 direct mail participants.

The Stages of Concern questionnaires were mailed to participants five months after the treatment was administered. They received the questionnaires approximately three days before the scheduled interview. A follow-up questionnaire was mailed to non-respondents three weeks after the first questionnaire was mailed.

Levels of use, cost comparison, stages of concern, and evaluation of inservice were analyzed by using percentages and one-way and two-way analyses of variance. Data regarding subjects' age and years of teaching were analyzed by frequency count and Chi-square analysis.

The stages of concern results were coded on individual tally sheets and raw scores were obtained for each stage. These raw scores were converted to percentile scores. A comparison of percentable scores were illustrated by graphs.

Cost factors were determined by maintaining a log of postage, travel, telephone charges, and a total cost of the curriculum material. A total cost was determined by combining the aforementioned factors. The presentation and analysis of data made extensive use of tables. Such tables were utilized to reflect count, mean, standard deviation, and in some instances degree of freedom, and analysis of variance. The tables were accompanied by statements describing the observations of the data.

Significant differences were found between the mean scores of respondents in several of the comparisons. The findings based on these differences are reported in the next section.

Findings

Question Related to Levels of Use

Based on analysis of levels of use by percentage, most of the participants were at a Level III rating. The total Level III rating for teleconference, workshop, and direct mail are 52%, 78% and 50% respectively. Because of the demand for the product through an impact assessment, it was assumed that a majority of the teachers should be using the materials at the mechanical (III) level. While the statistics indicated a large number of workshop participants are at Level III, it is important to note that a larger number of teleconference group members were preparing to use the curriculum materials at Level II.

The non-use rating for direct mail participants in comparison to other groups was high at 29% of the respondents. Comparison of means show that the direct mail group differed significantly from the teleconference and workshop groups. Therefore, it is assumed that the level of use of materials is affected by the inservice strategy.

Question Related to Cost Factors

Meticulous records were maintained to determine total cost of each participant in the various groups. The average cost of the members of the teleconference, workshop and direct mail groups was \$129.40, \$175.70 and \$78.55 respectively. The teleconference and workshop differed at \$46.30 and the margin continues to increase between workshop and direct mail, and teleconference and direct mail. Mean analysis indicated a significant difference among all groups.

The use of a commercial bridging company tended to increase the normal telephone charges for the teleconference. This company was used because it ensured greater quality of operating multiple calling locations.

Based on this study and other findings in the literature, it is more expensive to have a workshop than it is to conduct a teleconference or have direct mail instruction.

Another concern is the relationship of cost to the levels of use of the group members. As the cost decreased, the levels of use of the materials tended to be lesser. However, in the teleconference and workshop comparison, the workshop cost factors increased considerably, but the degree of implementation was only slightly affected. It is possible thus to conclude that the same

objectives and goals were obtained at a lesser cost using the teleconference inservice mode.

Question Related to Evaluation of the Inservice Mode

All participants rated their degree of satisfaction with the inservice training. Overall, very few of the participants had negative responses about participating in any of the inservice activities. Workshop participants received more excellent ratings with 59% of the group members expressing a high degree of satisfaction with the inservice programs. Mean comparison of the three groups indicated that the direct mail was less satisfied with the instruction received. This can account for the fact that some of the direct mail members indicated that they did not read the enclosed instructions for using the materials.

The analysis of the inservice evaluation with respect to age and years of teaching experience was not significant. However, a closer look at the raw data indicated that there was a relationship between cost of the inservice strategy and the inservice evaluation. The participants tended to be less satisfied with the inservice as the cost of the activity was lower, especially in the direct mail group. Finally, the degree of use tended to be lesser if the constituents were less satisfied with the inservice in which they participated.

In summary, the direct mail participants' degree of use of the product were lower than the other groups. The degree of satisfaction of the inservice was significantly lower for direct mail participants than the teleconference or workshop participants, but the cost for conducting the direct mail inservice was considerably less than the other groups.) The results from this study in terms of levels of use, degree of satisfaction with inservice did not differ between teleconference and workshop groups.

Question Related to Stages of Concern

The stages of concern can be analyzed by several methods. In this study an investigation of the high scores was analyzed, and a composite profile was used to illustrate the difference between groups. Then, a more robust analysis was conducted to determine the significance between groups at each stage of concern.

The Concerns-Based Adoption Model theory implies that during the early stages of the innovation, the self concerns are more evident. More specifically, the Model describes these early stages as awareness, informational and personal concerns about an innovation. In comparing the profiles, awareness concerns tended to be more intense for the teleconference participants, while informational concerns seemed to be the peak emphasis for direct

mail participants during the early stages. Also within the self concern category, the teleconference participant had more intense personal concerns.

The workshop participants tended to move rapidly into the task-oriented concerns as indicated by a more intense score on management concerns. Very few of the respondents indicated high concerns for collaboration or working with others.

The impact concern assessed through consequences, collaboration, and refocusing were minimal in the early stages of implementation. Refocusing concerns can mean dissatisfaction with the materials, confusion about the use of the materials, or they are using other materials. The direct mail group indicated a more intense refocusing concern than the other groups.

This analysis provides pertinent information for change agents and administrators. The intense informational scores from direct mail group was an indication that many of these participants might need additional assistance in using the new curriculum materials. Personal interaction with these participants should be planned through another inservice activity. In addition, the high intense concern on refocusing was another indication that several of the direct mail participants were directing their attention to other products, or have

refused to try to use the new competency-based curriculum materials.

The teachers concerns were analyzed by using the mean score for each stage and comparing them between groups. When the scores were analyzed from this perspective, there was a significant difference between groups on the stage 5 - collaboration. The multiple range test indicated that the direct mail differed from teleconference and workshop groups. The teleconference and workshop groups tended to have greater collaboration concerns than the direct mail group.

The total score analyses demonstrated some interesting results. The overall concerns for the direct mail group differed significantly from teleconference or workshop participants. This means that the direct mail group concerns should be carefully assessed to help them proceed through the stages of concern.

Question Related to Personal Characteristics

This study examined the relationship between personal characteristics and the participants levels of use and stages of concern about an innovation. The findings in this study indicated no significant difference when a one-way analysis of variance was conducted. Two-way analysis of variance indicated a significant difference between groups in relation to age at stage 0, stage 5,

and total score at .05. This means that age factor can affect the awareness and collaboration concerns that participants would have within groups, and the overall concerns can be affected by age.

The two-way analysis of variance for number of years teaching was significantly at stage 5, and total score at .05. Consequently, the years of teaching can significantly affect teacher concerns.

The last dimension explored in this study was the level of use and personal characteristics. The levels of use of the curriculum materials were examined to determine the association with age and years of teaching. The findings in this study revealed no significant differences at .05.

Recommendations

The following recommendations are made based on the findings of the study:

1. additional assistance needs to be provided for participants who received instruction by direct mail and indicated high informational concerns.
2. serious consideration should be given to using the teleconferencing technique for inservicing vocational educators. This study suggests that the results are the same at less cost.

3. the dissemination and diffusion section should seriously review its policy of using the direct mail instruction for distributing curriculum products and carefully consider the implementation of teleconferencing as an alternative.

It is suggested that further research can be conducted:

1. on this study, as a longitudinal research method to measure the progressive Stages of Concern and the Levels of Use on the Food Production and Service curriculum materials.
2. on comparing teleconference and workshop programs within other vocational program areas.
3. on designing a statewide teleconferencing system for vocational education in Florida.
4. on a variety of program designs for teleconferencing in vocational education.
5. on the effect on visuals when conducting teleconferencing programs.

APPENDICES

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Appendix A
Concerns Questionnaire
for
Food Production and Service

Name _____

In order to identify these data, please give us the last four digits of your Social Security number: _____

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the innovation adoption process. The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years experience in using them. Therefore, a good part of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time. For the completely irrelevant items, please circle "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale. For example:

This statement is very true of me at this time. 0 1 2 3 4 5 6 7

This statement is somewhat true of me now. 0 1 2 3 4 5 6 7

This statement is not at all true of me at this time. 0 1 2 3 4 5 6 7

This statement seems irrelevant to me. 0 1 2 3 4 5 6 7

Please respond to the items in terms of your present concerns, or how you feel about your involvement or potential involvement with Food Production and Service Competency-Based Instructional Materials (please specify the innovation). We do not hold to any one definition of this program, so please think of it in terms of your own perceptions of what it involves. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with the above named.

Thank you for taking time to complete this task.

Adapted from: Educational Innovations/CBAM Project R&D Center for Teacher Education, The University of Texas at Austin, 1974

I. Demographic Data

Please complete:

1. Female _____ Male _____

2. Age

_____ 20 - 29

_____ 30 - 39

_____ 40 - 49

_____ 50 - 59

_____ 60 - 69

3. Highest degree earned

_____ Associate

_____ Bachelor

_____ Master

_____ Doctorate

4. Number of years teaching

_____ 1 - 3

_____ 4 - 6

_____ 7 - 9

_____ 10 - 12

_____ more than 12 years

5. How many years have you been teaching Food Pro-
ductions & Service, not counting this year. _____

Concerns Questionnaire
for
Food Production and Service
Competency-Based Instructional Materials

0	1	2	3	4	5	6	7
Irrevelant	Not true of me now		Somewhat true of me now		Very true of me now		

Stages of Concern

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1. I am concerned about students' attitudes toward this innovation. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I now know of some other approaches that might work better. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I don't even know what the innovation is. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I am concerned about not having enough time to organize myself each day. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I would like to help other faculty in their use of competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I have a very limited knowledge about competency-based material. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I would like to know the effect of reorganization on my professional status. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I am concerned about conflict between my interest and my responsibilities. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I am concerned about revising my use of the competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | | | |
|-----|--|---|---|---|---|---|---|---|---|
| 10. | I would like to develop a working relationship with both our faculty and outside faculty using the competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. | I am concerned about how the competency-based materials affect students. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. | I am not concerned about the competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. | I would like to know who will make the decisions in the new system. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. | I would like to discuss the possibility of using the competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. | I would like to know what resources are available if we decide to adopt the competency-based materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. | I am concerned about my inability to manage all the innovation requires. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. | I would like to know how my teaching or administration is supposed to change. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. | I would like to familiarize other departments or persons with the progress of this new approach. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. | I am concerned about evaluating my impact of students. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. | I would like to review the innovation's instructional approach. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. | I am completely occupied with other things. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | | | |
|-----|--|---|---|---|---|---|---|---|---|
| 22. | I would like to modify our use of the competency-based materials based on the experiences of our students. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. | Although I don't know about competency-based instruction, I am concerned about things in the area. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. | I would like to excite my students about their part in this approach. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. | I am concerned about time spent working with non-academic problems related to this innovation. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26. | I would like to know what the use of competency-based materials will require in the immediate future. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. | I would like to coordinate my effort with others to maximize the innovation's effects. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. | I would like to have more information on time and energy commitments required by competency-based instruction. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. | I would like to know what other faculty are doing in this area. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. | At this time, I am not interested in learning about competency-based materials for Food Production & Services. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. | I would like to determine how to supplement, enhance, or replace the innovation. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

- | | | | | | | | | | |
|-----|--|---|---|---|---|---|---|---|---|
| 32. | I would like to use feed-back from students to change the program. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. | I would like to know how my role will change when I am using competency-based instructional materials. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. | Coordination of tasks and people is taking too much of my time. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. | I would like to know how this innovation is better than what we have now. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Comments:

Adapted from: Educational Innovation/CBAM Project R&D
Center for Teacher Education, The
University of Texas at Austin, 1974.

Appendix B

Level of Use - For Competency-Based
Instructional Materials for
Food Production and Service

TELEPHONE SURVEY

"HELLO, MY NAME IS _____. I AM
WITH THE DIVISION OF VOCATIONAL EDUCATION. I AM CALLING
CONCERNING THE Competency-Based Materials that you
received for Food Production and Service _____. I WANT TO
ESTABLISH THE EXTENT TO WHICH YOU ARE USING THE MATERIALS.

1. First of all, do you have a copy of the
material?

IF "NO," ASK THE FOLLOWING:

- A. Would you like to receive a copy?
- B. Have you tried to get a copy?

EXIT

2. What method of inservice was used to introduce
the products to you? _____ Workshop _____ Tele-
conference _____ Direct mail

3. Are you using the materials?

IF "NO," SKIP TO QUESTION 11

IF "YES," PROCEED

4. What do you see as the strengths and weaknesses
of the competency-based materials in your
situation?

Response:

5. Are you currently looking for additional information on competency-based materials for Food Production and Service?

Response:

6. Do you ever talk with others about the new curriculum package?

Response:

7. Are you doing any evaluating formally or informally, of the use of the materials? What type of feedback have you received from students?

Response:

8. Have you made any changes recently in how you see the innovation?

Response:

9. As you look ahead to later this year, what plans do you have in relation to your use in the innovation?

Response:

10. If working with others, how frequently?

Response:

IF "NO"

11. Have you made a decision to use the innovation in the future?

Response:

12. Do you have adequate information about the curriculum material?

Response:

13. Are you currently looking for additional information about competency-based materials for Food Production and Service?

Response:

14. What do you see as the strengths and weaknesses of the innovation for your situation?

Response:

15. At this point in time, what kinds of questions are you asking about the innovation?

Response:

16. Do you talk with others and share information thus far?

Response:

17. What are you planning with respect to the innovation?

Response:

18. Can you summarize for me where you see yourself right now in relation to the use of the innovation?

Response:

Past Users

1. Why did you stop using the innovation?

Response:

2. When you assess the innovation at this point, what do you see as the strengths and weaknesses for you?

Response:

One final question, on a scale from 1 - 5, with 1-poor, and 5-excellent, please rate the assistance or inservice strategy for introducing this product.

1-poor 2-fair 3-good 4-very good 5-excellent

"THANK YOU VERY MUCH FOR YOUR HELP. GETTING INFORMATION FROM EDUCATORS LIKE YOURSELF CAN HELP US GIVE YOU BETTER SUPPORT. THANK YOU AGAIN."

APPENDIX C

LEVEL OF USE RATING SHEET (CDAM, 1975)

Tape #: _____

Date: / /

Name: _____

School: _____

Rater: _____

Level	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Performing	Overall LoU
Non-Use	0	0	0	0	0	0	0
Orientation	I	I	I	I	I	I	I
Preparation	II	II	II	II	II	II	II
Mechanical Use	III	III	III	III	III	III	III
Routine	IV	IV	IV	IV	IV	IV	IV
Refinement	V	V	V	V	V	V	V

APPENDIX D

LEVELS OF USE OF THE INNOVATION

LEVELS OF USE Scale Point Definitions of the Levels of Use of the Innovation	CATEGORIES					
	Knowledge	Acquiring Information	Sharing	Assessing	Planning	Performing
Levels of Use are distinct states that represent observably different types of behavior and patterns of innovation use as exhibited by individuals and groups.	That which the user knows about characteristics of the innovation, how to use it, and consequences of its use. This is cognitive knowledge related to using the innovation not feelings or attitudes.	Solicits information about the innovation in a variety of ways, including questioning resource persons, corresponding with resource agencies, reviewing printed materials, and making visits.	Discusses the innovation with others. Shares plans, ideas, resources, outcomes, and problems related to use of the innovation.	Examines the potential or actual use of the innovation or some aspect of it. This can be a mental assessment or can involve actual collection and analysis of data.	Designs and outlines short- and/or long-range steps to be taken during process of innovation adoption, i.e., aligns resources, schedules activities, meets with others to organize and/or coordinate use of the innovation.	Carries out the actions and activities entailed in operationalizing the innovation.
Level 0 Non-Use: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.	Knows nothing about this or similar innovations or has only very limited general knowledge of efforts to develop innovations in the area.	Takes little or no action to solicit information beyond reviewing descriptive information about this or similar innovations when it happens to come to personal attention.	Is not communicating with others about the innovation beyond possibly acknowledging that the innovation exists.	Takes no action to analyze the innovation, its characteristics, possible use, or consequences of use.	Schedules no time and specifies no steps for the study or use of the innovation.	Takes no discernible action toward learning about or using the innovation. The innovation and/or its accouterments are not present or in use.
DECISION POINT A	Takes action to learn more detailed information about the innovation.					
Level 1 Orientation: State in which the user has acquired or is acquiring information about the innovation and/or has explored or is exploring its value orientation and its demands upon user and user system.	Knows general information about the innovation such as origin, characteristics, and implementation requirements.	Seeks descriptive material about the innovation. Seeks opinions and knowledge of others through discussions, visits, or workshops.	Discusses the innovation in general terms and/or exchanges descriptive information, materials, or ideas about the innovation and possible implications of its use.	Analyzes and compares materials, content, requirements for use, evaluation reports, potential outcomes, strengths and weaknesses for purpose of making a decision about use of the innovation.	Plans to gather necessary information and resources as needed to make a decision for or against use of the innovation.	Explores the innovation and requirements for its use by talking to others about it, reviewing descriptive information and sample materials, attending orientation sessions, and observing others using it.

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DECISION POINT B

Makes a decision to use the innovation by establishing a time to begin.

Level II

Preparation: State in which the user is preparing for first use of the innovation.

Knows logistical requirements, necessary resources and timing for initial use of the innovation, and details of initial experiences for clients.

Seeks information and resources specifically related to preparation for use of the innovation in own setting.

Discusses resources needed for initial use of the innovation. Joins others in pre-use training, and in planning for resources, logistics, schedules, etc., in preparation for first use.

Analyzes detailed requirements and available resources for initial use of the innovation.

Identifies steps and procedures entailed in obtaining resources and organizing activities and events for initial use of the innovation.

Studies reference materials in depth, organizes resources and logistics, schedules and receives skill training in preparation for initial use.

DECISION POINT C

Begins first use of the innovation.

Level III

Mechanical Use: State in which the user focuses most effort on the short-term day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.

Knows on a day-to-day basis the requirements for using the innovation. Is more knowledgeable on short-term activities and effects than long-range activities and effects of use of the innovation.

Solicits management information about such things as logistics, scheduling techniques, and ideas for reducing amounts of time and work required of user.

Discusses management and logistical issues related to use of the innovation. Resources and materials are shared for purposes of reducing management, flow and logistical problems related to use of the innovation.

Examines own use of the innovation with respect to problems of logistics, management, time, schedules, resources, and general reactions of clients.

Plans for organizing and managing resources, activities, and events related primarily to immediate ongoing use of the innovation. Planned-for changes address managerial or logistical issues with a short-term perspective.

Manages innovation with varying degrees of efficiency. Often lacks anticipation of immediate consequences. The flow of actions in the user and clients is often disjointed, uneven and uncertain. When changes are made, they are primarily in response to logistical and organizational problems.

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DECISION POINT D

A routine pattern of use is established.

Level IV

Routine: Use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.

Knows both short- and long-term requirements for use and how to use the innovation with minimum effort or stress.

Makes no special efforts to seek information as a part of ongoing use of the innovation.

Describes current use of the innovation with little or no reference to ways of changing use.

Limits evaluation activities to those administratively required, with little attention paid to findings for the purpose of changing use.

Plans intermediate and long-range actions with little projected variation in how the innovation will be used. Planning focuses on routine use of resources, personnel, etc.

Uses the innovation smoothly with minimal management problems; over time there is little variation in pattern use.

DECISION POINT E

Changes use of the innovation based on formal or informal evaluation in order to increase client outcomes.

Level V

Refinement: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

Knows cognitive and affective effects of the innovation on clients and ways for increasing impact on clients.

Solicits information and materials that focus specifically on changing use of the innovation to affect client outcomes.

Discusses own methods of modifying use of the innovation to change client outcomes.

Assesses use of the innovation for the purpose of changing current practices to improve client outcomes.

Develops immediate and long-range plans that anticipate possible and needed steps, resources, and events designed to enhance client outcomes.

Explores and experiments with alternative combinations of the innovation with existing practices to maximize client involvement and to optimize client outcomes.

Adapted from Procedures for Adopting Educational Innovations Project, Research and Development Center for Teacher Education, University of Texas at Austin, 1975, N.I.E. Contract No. NIK-C-74-0087.

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